

PROF. H. KUWANO'S COLLECTION OF BUTTERFLIES FROM CHINA

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ONE PLATE

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The butterflies dealt with in this paper were collected by Prof. H. Kuwano (桑野久任) in 1905-1909 in China, especially in the northern part. The collection contains 443 individuals, referable to 89 species and subspecies, of which 1 species and 2 subspecies are new. The localities are as follows: Mt. Sioutaisan (察哈爾省宣化府蔚州小五台山), Bouan (察哈爾省涿鹿縣舊名保安), Hwailai (察哈爾省懷來), Nankou (河北省北境南口), Peiping (北平), Malanku (河北省遵化縣馬欄峪), Sanhaikwan (河北省山海關), Bouting (河北省保定), Usungling (廣常縣蜈蚣岑) and Hwangkiang (湖北省黃岡).

The names of the species are arranged alphabetically in each family, with sex and number of specimens, date of collection and locality and also some other remarks. The specimens are now kept in the Entomological Laboratory of Songdo High School in Songdo (開城), Korea.

PAPILIONIDAE

1. *Papilio machaon* Linné ♂ 7, ♀ 1

Jul. 11, 13, 1907 Mt. Sioutaisan, Aug. 1905 Nankou, Sept. 1906 Peiping.

2. *Papilio polytes borealis* Felder ♂ 1

Jul. 1905 Hwangkiang.

3. *Papilio xuthus* Linné f. aest. ♀ 4

Aug. 1905 Peiping, Aug. 10, 1906 Sanhaikwan.

*4. *Parnassius delius phoebus* Fabricius ♂ 4, ♀ 7

Jul. 30, 1906, Jul. 15, 1907 Mt. Sioutaisan.

This variable species resembles both *P. bremeri* and *P. nomion*, but differs from them in the following respects:

A. Differences from *P. bremeri* may be found in the presence of round red spots as in *P. nomion*, and also in that the black scaling

on the outer parts of veins is more evident than in *P. bremeri*.

B. Differences from *P. nomion* consist in: a. the relation of appearance of the 2 costal red spots (cellules 8, 5) and the hindmarginal one (cellule 1b) on the forewing is contrary to that in *P. nomion*, i. e. in *P. d. phoebus* the 2 costal spots are primary and the hindmarginal one is secondary, while in *P. nomion*, the reverse is true. In *P. d. phoebus* this hindmarginal red spot is obsolescent; in most of ♂♂ even the black spot does not appear.

b. Antenna blackish brown as in *P. bremeri*.

5. *Parnassius nomion* Fischer ♂ 4, ♀ 3

Jul. 26, 1906 Bouan, Jul. 23, 1907 Usungling.

These specimens belong to the original form; but the 3 red spots of the forewing are larger.

6. *Parnassius stubbendorffii* Ménétrières ♂ 18, ♀ 3

Jul. 12, 15, 1907 Mt. Sioutaisan.

1 ♂ (Jul. 12, 1907) is malformed (Fig. 1). This specimen differs from the normal as follows: The outer margin of the left forewing is incurved at the cellules 4 and 1b, and that of the left hindwing, near the vein 2.

7. *Sericinus telamon* Donovan f. *telamon*

f. vern. ♂ 11, ♀ 2

May 1906 Peiping.

f. aest. ♂ 4, ♀ 7

Aug. 16, 17, 1906 Nankou, Jul. 1905, Jun. *2, *3, 1906 Peiping, Aug. 10, 1906 Sanhaikwan, Jul. 24, 1907 Usungling.

PIERIDAE

1. *Aporia crataegi* Linné ♀ 1

Jul. 14, 1907 Mt. Sioutaisan.

*2. *Colias aurora* Esper ♂ 1, ♀ 4 (f. whitish 3, f. reddish 1)

Jul. 14, 18, 1907 Mt. Sioutaisan.

Of 4 ♀♀, one is normal whitish, one yellowish, the third in transition to reddish, and the last one is normal reddish. The first to third individuals may be classified under the whitish form.

3. *Colias hyale* Linné ♂ 13, ♀ 14 (f. whitish 9, f. yellowish 5)

1905, May 14, 1906 Peiping, Aug. 8, 9, 1906 Sanhaikwan.

4. *Gonepteryx aspasia aspasia* Ménétrières f. aest. ♂ 3

Jul. 14, 1907 Mt. Sioutaisan.

One specimen is very small. Forewing—length: 24mm (Fig. 2).

*2 caterpillars collected on May 22, 1906, pupated on 24, and butterflies emerged on June 2 and 3.

5. *Gonepteryx rhamni amurensis* Graeser ♀ 1 (f. whitish)
Jul. 15, 1907 Mt. Sioutaisan.
6. *Leptidia amurensis* Ménétériès ♂ 3, ♀ 3
Jul. 18, 19, 1907 Mt. Sioutaisan, 1906 Peiping.
7. *Leucochloë daphidice* Linné ♂ 10, ♀ 4
Jul. 10, 1907 Hwailai, 1905, Apr. 1, May 15, 1906 Peiping, Aug. 9, 1906 Sanhaikwan,
Jul. 23, 1907 Usungling.
8. *Pieris napi* Linné f. vern. ♀ 1
Jul. 15, 1907 Mt. Sioutaisan.
9. *Pieris rapae* Linné ♂ 11, ♀ 4
Apr. 16, May 2, 10, 14, 1906 Peiping, Apr. 30, 1906 Malanku, Aug. 7, 9, 1906
Sanhaikwan.

SATYRIDAE

1. *Aphantopus hyperantus hyperantus* Linné ♂ 5
Jul. 14, 1907 Mt. Sioutaisan.
2. *Callerebia albipuncta* Leech ♂ 1
Aug. 15, 1905 Nankou.
3. *Coenonympha amaryllis* Cramer ♂ 6, ♀ 1, sex? 2
Jul. 11, 1909 Mt. Sioutaisan, Aug. 17, 1906 Nankou, Aug. 1905 Peiping, Aug. 9, 1906
Sanhaikwan.
4. *Coenonympha oedippus* Fabricius ♂ 6
Jul. 12, 14, 19, 1907 Mt. Sioutaisan, Aug. 11, 1906 Sanhaikwan.
- *5. *Epinephele lycaon pasimelas* Staudinger ♂ 1, ♀ 1
Jul. 14, 19, 1907 Mt. Sioutaisan.
- *6. *Erebia ligea ajanensis* Ménétériès ♂ 1
Jul. 30, 1906 Mt. Sioutaisan.
- *7. *Erebia medusa transiens* Rühl-Heyne ♂ 7, ♀ 4
Jul. 12, 15, 1907 Mt. Sioutaisan.
8. *Melanargia halimede* Ménétériès ♂ 16, ♀ 1
Jul. 28, 1906, Jul. 10, 11, 14, 18, 1907 Mt. Sioutaisan.
9. *Oeneis nanna* Ménétériès ♂ 2
1906 Peiping.
10. *Pararge deidamia deidamia* Eversmann ♂ 1, ♀ 6
Jul. 12, 21, 1907 Mt. Sioutaisan, Aug. 18, 1906 Nankou, 1906 Peiping.
- **11. *Satyrus alcyone chinensis* Seok subsp. nov. ♀ 1 (Figs. 3, 4)
Jul. 10, 1907 Hwailai.

This subspecies differs from *S. a. zezutonis* Seok as follows:

- a. The white band of the hindwing is sharply curved in W-shape.
- b. The white band of the forewing is much more developed.

This individual is beyond the variation-sphere of *S. a. zezutonis* which I have estimated on 68 ♂♂ and 9 ♀♀.

Expanse: 54 mm, Wing-length: 29 mm.

12. *Satyrus dryas* Scopoli ♂ 2, ♀ 11

Aug. 1, 1906 Mt. Sioutaisan, 1906 Peiping.

*13. *Satyrus mnischevii lehana* Moore ♂ 1

Jul. 11, 1907 Mt. Sioutaisan.

14. *Ypthima motschulskyi* Bremer et Grey ♀ 1

Aug. 10, 1906 Sanhaikwan.

NYMPHALIDAE

1. *Apatura ilia here* Felder ♂ 2, ♀ 2

1906 Peiping, Aug. 9, 1906 Sanhaikwan.

♀ ♀ vary more than ♂ ♂ and ♀ ab. *sobrina* Stichel is within the variation-sphere of this subspecies.

2. *Apatura ilia serarum* Oberthür ♀ 1

Aug. 1905 Peiping.

*3. *Apatura iris amurensis* Stichel ♂ 1

Jul. 14, 1907 Mt. Sioutaisan.

*4. *Apatura nycteis* Ménétriers ♂ 1, ♀ 1

Jul. 11, 1907 Mt. Sioutaisan.

5. *Argynnis aglaja fortuna* Janson ♂ 1, ♀ 1

1906 Peiping.

6. *Argynnis daphne* Schiffermüller ♂ 4, ♀ 4

Jul. 11, 14, 19, 1907 Mt. Sioutaisan, 1906 Peiping.

7. *Argynnis ino* Rottemburg ♂ 2, ♀ 4

Jul. 14, 15, 1907 Mt. Sioutaisan.

8. *Argynnis locuples* Butler ♂ 11, ♀ 5

Jul. 11, 14, 18, 19, 1907, Jul. 14, 1909 Mt. Sioutaisan, 1906 Peiping.

*9. *Argynnis oscarus* Eversmann ♂ 2

Jul. 14, 1907 Mt. Sioutaisan.

These specimens are identified as the typical subspecies, but there is no sharp difference between the typical subspecies and the Korean subspecies, *australis* Graeser.

**10. *Argynnis pales palinoida* Seok subsp. nov. ♂ 2 (Figs. 5, 6)

Jul. 1907 Mt. Sioutaisan.

There are many subspecies in this highly variable species; but these specimens can be referred to none of them. Therefore a new subspecies has to be established.

This new subspecies differs from *A. p. palina* Fruhstorfer found in West China as follows:

- a. Markings of the wings are more slender.
- b. The red-brownish marking in the basal part of hindwing

beneath is much enlarged near the anal angle.

Expanse: 33 mm, Wing-length: 18 mm.

11. *Hestina assimilis* Linné ♂ 2, ♀ 5

Jul. 14, 1907 Mt. Sioutaisan, Aug. 17, Sept. 16, 1906 Nankou, 1906 Peiping, Aug. 9, 1906 Sanhaikwan.

12. *Limenitis helmanni* Lederer ♂ 1, ♀ 1

Jul. 14, 1907 Mt. Sioutaisan.

13. *Melitaea didyma mandchurica* Seitz ♂ 5, ♀ 4

Jul. 15, 1907 Mt. Sioutaisan, Sept. 1905, Sept. 1906 Peiping.

M. d. peginensis Seitz is synonymous with *mandchurica* Seitz.

*14. *Melitaea parthenie* Brenske subsp.? ♂ 8, ♀ 5

Jul. 15, 19, 1907 Mt. Sioutaisan.

15. *Melitaea phoebe scotosia* Butler ♂ 4, ♀ 1

Jul. 11, 1907 Mt. Sioutaisan, 1906 Peiping.

16. *Neptis alwina* Bremer et Grey ♀ 2

Jul. 18, 1907 Mt. Sioutaisan, 1906 Peiping.

17. *Neptis coenobita insularum* Fruhstorfer ♂ 2, ♀ 5

Jul. 11, 14, 18, 1907 Mt. Sioutaisan, 1906 Peiping.

18. *Neptis hylas hylas* Linné ♀ 1

1906 Peiping.

19. *Neptis thisbe thisbe* Ménétriers ♀ 1

Jul. 1907 Mt. Sioutaisan.

20. *Polygonia c-album* Linné subsp.? f. vern. ♂ 1, ♀ 1

1905, May 10, 1906 Peiping.

The colour is paler and the spots are smaller than in Korean forms.

21. *Polygonia c-aureum* Linné

f. vern. ♂ 2, ♀ 3

May 23, 1906 Peiping.

f. aest. ♂ 5, ♀ 4

Aug. 9, 17, 1906 Nankou, 1906 Peiping, Aug. 9, 1906 Sanhaikwan.

*22. *Polygonia l-album samurai* Fruhstorfer ♀ 1

Jul. 18, 1907 Mt. Sioutaisan.

23. *Pyrameis cardui* Linné ♂ 1, ♀ 1

Jul. 1905 Peiping.

24. *Pyrameis indica indica* Herbst ♂ 1, ♀ 3

Aug. 17, 1906 Nankou, Aug. 5, 1905, Sept. 1906 Peiping, Aug. 11, 1906 Sanhaikwan.

25. *Timelaea maculata* Bremer et Grey ♂ 3

Aug. 15, 1906 Nankou, 1906 Peiping.

26. *Vanessa antiopa* Linné ♂ 1, ♀ 2

Jul. 11, 14, 19, 1907 Mt. Sioutaisan.

27. *Vanessa xanthomelas* Esper ♂ 1, ♀ 3

Jul. 11, 18, 1907 Mt. Sioutaisan, 1906 Peiping.

LYCAENIDAE

1. *Chrysophanus dispar auratus* Leech ♂ 1, ♀ 2
1905 Peiping, Aug. 1905 Bouting.
2. *Chrysophanus hippothoë hippothoë* Linné ♂ 1
1907 Mt. Sioutaisan.
3. *Chrysophanus phlaeas chinensis* Felder f. aest. ♀ 3
Aug. 17, 1906 Nankou, 1906 Peiping.
4. *Everes argiades amurensis* Rühl-Heyne ♂ 1
Aug. 18, 1906. Nankou.
5. *Everes fischeri* Eversmann ♂ 1, ♀ 2, sex? 1
1906 Peiping.
6. *Lycaena argus insularis* Leech ♂ 6, ♀ 4
Jul. 11, 19, 1907 Mt. Sioutaisan, 1906 Peiping.
- *7. *Lycaena arion ussuriensis* Scheljuzhko ♂ 2, ♀ 1
Jul. 14, 1907 Mt. Sioutaisan, Aug. 18, 1906 Nankou, 1906 Peiping.
8. *Lycaena chinensis chinensis* Murray ♂ 1, ♀ 1
May. 14, 1906 Peiping.
- *9. *Lycaena cleobis* Bremer ♂ 1
Jul. 15, 1907 Mt. Sioutaisan.
10. *Lycaena eros boisduvalii* H.-Schäffer ♂ 2, ♀ 1
Jul. 11, 15, 1907 Mt. Sioutaisan.

The black margin of the wing surface in ♂ and the orange band of the same in ♀ are evidently broader than those of the Korean form, and these specimens are identified as *L. e. boisduvalii*. Therefore, the Korean form is to be named as a different subspecies. If *boisduvalii* or *erotides* Staudinger (cf. D. M. Seok: Papilioj en Koreujo, Unua Raporto, Bulletin of the Kagoshima Imperial College of Agr. & Fores., Dedicated to the Twentyfifth Anniversary, vol. 1. p. 755) does not correspond to the Korean form; *sutleja* Moore may be identical with the latter.

- *11. *Lycaena eumedon fylgia* Spångb. ♂ 1
Jul. 15, 1907 Mt. Sioutaisan.
12. *Lycaena euphemus* Hübner ♂ 2, ♀ 2
Jul. 14, 18, 1907 Mt. Sioutaisan, Aug. 17, 1906 Nankou, 1906 Peiping.
- *13. *Lycaena happensis* Matsumura ♂ 1, ♀ 1
Jul. 1907 Mt. Sioutaisan.
14. *Lycaena icarus icarinus* Scriba ♂ 1, ♀ 1
May 2, 1906 Peiping.
15. *Lycaena orion* Pallas ♂ 2
1906 Peiping.
16. *Niphanda fusca* Bremer et Grey ♂ 1, ♀ 1
Aug. 17, 1906 Nankou, May 21, 1906 Peiping.

17. *Thecla eximia* Fixsen ♂ 1

Aug. 17, 1906 Nankou.

*18. *Thecla prunoides* Staudinger ♂ 2, ♀ 3

Jul. 15, 18, 19, 1907 Mt. Sioutaisan.

19. *Thecla spini* Schiffermüller ♂ 10, ♀ 4

Jul. 11, 12, 14, 18, 1907 Mt. Sioutaisan.

*20. *Thecla w-album fentoni* Butler ♀ 2

Jul. 15, 1909 Mt. Sioutaisan, Jun. 5, 1905 Peiping.

HESPERIIDAE

1. *Aeromachus inachus* Ménétriers ♂ 1

Aug. 11, 1906 Sanhaikwan.

2. *Augiades sylvanus* Esper ♂ 5, ♀ 2

Jul. 11, 14, 19, 1907 Mt. Sioutaisan.

*3. *Erynnis florinda* Butler ♂ 1; ♀ 1

1906 Peiping, Aug. 11, 1906 Sanhaikwan.

*4. *Hesperia gigas minor* Mabille ♂ 1

Jul. 14, 1907 Mt. Sioutaisan.

*5. *Hesperia hesanzina* Seok ♂ 1

Jul. 19, 1907 Mt. Sioutaisan.

6. *Hesperia maculata* Bremer et Grey ♂ 1, ♀ 3

1906 Peiping.

7. *Hesperia zona* Mabille ♀ 1

Aug. 17, 1906 Nankou.

8. *Parnara guttata* Bremer ♂ 1

Aug. 1905 Peiping.

***9. *Parnara kuwanoi* Seok sp. nov. ♀ 1 (Figs. 7, 8)

1905 Peiping.

This butterfly is intermediate between *P. pellucida* Murray and *P. jansonis* Butler, and also resembles *P. guttatus* Bremer. Differences may be found in:

a. 4 transparent white dots of the hindwing are not in a straight line as in *pellucida*, but they are smaller than in that species. There is one more spot in cellule 5 besides the 4 spots on the same beneath.

b. A conspicuous white dot in the cell of the hindwing beneath is as in *jansonis*, and is of about the same size as the others on the same side, but smaller than in *jansonis*.

c. The white dots of the forewing are comparatively larger than those of the hindwing. They are also larger than the corresponding dots of *pellucida*, *jansonis* and *guttatus*.

d. 2 conspicuous dots in cellules 1a and 1b of the forewing are as in *jansonis*, though much larger.

Measurement : Length of body, 20mm, Wing-length, 21 mm.

10. *Parnara mathias* Fabricius ♂ 1

11. *Thanaos montanus* Bremer ♂ 1

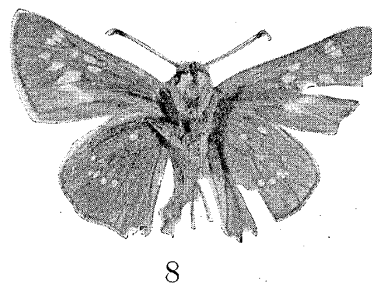
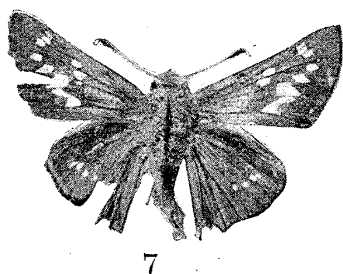
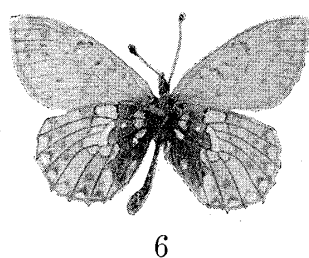
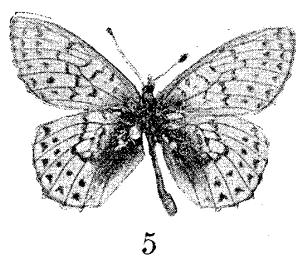
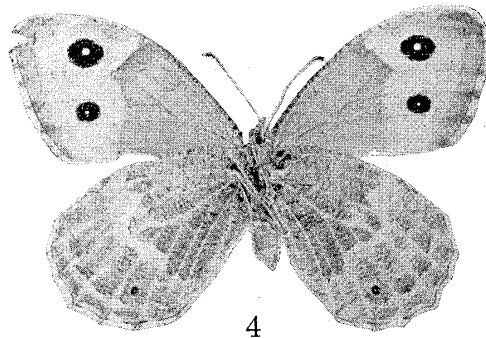
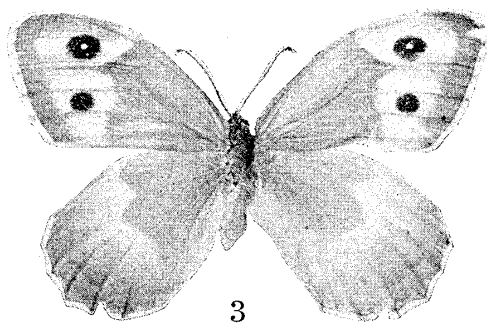
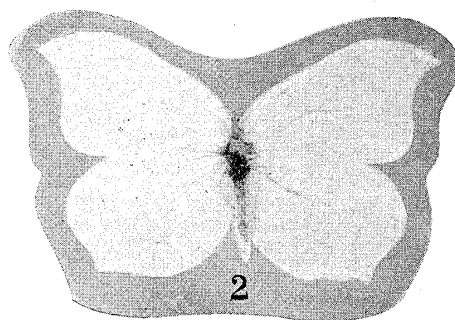
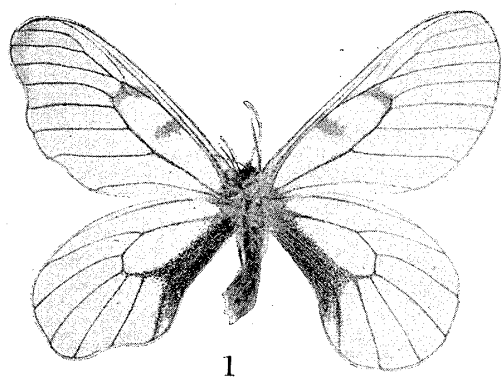
12. *Thanaos tages tages* Linné ♂ 4, ♀ 1

Table showing the number of species, specimens, etc. recorded in this paper

	Species	Specimens	Species newly recorded from China (*)	New subsp. (**)	New sp. (***)
Papilionidae	7	76	1	—	—
Pieridae	9	73	1	—	—
Satyridae	14	78	4	1	—
Nymphalidae	27	124	5	1	—
Lycaenidae	20	66	6	—	—
Hesperiidae	12	26	3	—	1
Total	89	443	20	2	1

Finally I have to express many thanks to Professors H. Kuwano and T. Esaki to whom the author is indebted for much favour, and also to Mr. Y. Pak (朴演煥) who helped me in ascertaining the localities.

Fig. 1. ♂ malformation of *Parnassius stubendorffii* Ménétériès, upperside.
 Fig. 2. Small ♂ of *Gonepteryx aspasia aspasia* Ménétériès f. aest., upperside.
 Fig. 3. *Satyrus alcyone chinensis* Seok Subsp. nov. ♀, upperside.
 Fig. 4. " " underside.
 Fig. 5. *Argynnis pales palinoida* Seok subsp. nov. ♂, holotype, upperside.
 Fig. 6. " " underside.
 Fig. 7. *Parnara kuwanoi* Seok sp. nov. ♀, upperside.
 Fig. 8. " " underside.



D. M. SEOK: PROF. H. KUWANO'S COLLECTION OF BUTTERFLIES